

# INDEX, VOLUME 16, 1992

## AUTHOR INDEX

- Adair, D., 476  
 Aksel, M. H., 414  
 Alidi, A. S., 645  
 Alliney, S., 148  
 Altiero, N. J., 618  
 Altman, T., 439
- Bakalis, P. S., 201  
 Bansal, P., 255  
 Barreto, G. F., 520  
 Baruh, H., 245  
 Berto, C. A., 520  
 Bickley, D. T., 423  
 Blajer, W., 70  
 Boulos, P. F., 439  
 Bradley, F. J., 534  
 Broadbridge, P., 155
- Cardona, J., 78  
 Chae, K. C., 36  
 Chakraverty, S., 269  
 Chamilothoris, G., 545  
 Chen, C. W., 394  
 Chen, C.-K., 325  
 Contractor, D. N., 282  
 Cook, A. E., 431  
 Costa, M. L. M., 589
- Dahhou, B., 545  
 Davis, R. P., 86  
 Detournay, C., 450  
 Dougherty, D. E., 374  
 Duncan, R. A., 431
- Ekebjærg, L., 506  
 Ellis, J. E., 201  
 Elsworth, D., 404  
 El Tawil, M. A., 330  
 Evans, A., 562
- Fujita, S., 47
- Galea, E. R., 610  
 Godoy, S. V., 47  
 Gong, Y.-J., 605  
 Gray, W. J., 652
- Hocking, G. C., 300  
 Honma, T., 314  
 Hossain, M. A., 630  
 Hromadka, T. V., II, 114  
 Huang, W.-Y., 16  
 Hwang, W. S., 394
- Ierotheou, C. S., 610  
 Igarashi, H., 314  
 Ingber, M. S., 124  
 Irving, A. D., 3
- Jha, N. K., 58  
 Justesen, P., 506
- Kaya, M. T., 414  
 Klemm, A. D., 605  
 Ko, M.-G., 338  
 Kukreti, A. R., 338  
 Kuwahara, K., 26
- Lai, C.-H., 101, 638  
 Laudiero, F., 148  
 Le, M., 43  
 Lee, H. W., 36  
 Lee, S. S., 36  
 Leggett, P., 610  
 Lich, T. G., 498  
 Liu, N., 618  
 Lo, Y. F., 491  
 Logan, J. D., 291  
 Lomen, D. O., 155  
 Lu, W.-D., 384  
 Luat, L. K., 498
- Ma, J., 43  
 Mahanty, B., 192
- Mahmoud, A. A., 330  
 Mahmoud, M. S., 141  
 Malin, M. R., 476  
 Malmberg, C. J., 170  
 Mandal, P., 192  
 Marchant, M. J., 562  
 Mazumdar, D., 255  
 Mersmann, A., 214  
 Militzer, J., 576  
 Mishra, B. K., 598  
 Mohapatra, P. K. J., 192
- Nadarajan, R., 36  
 Narayan, T., 255  
 Natakusumah, D. K., 562
- Pan, D., 214  
 Pantelis, G., 553  
 Patel, M. K., 610  
 Phan-Thien, N., 124  
 Philippopoulos, C., 484  
 Psyllos, A., 484
- Rajamani, R. K., 598  
 Ramos, J. I., 464  
 Rao, P. M., 26  
 Redmond, J. M., 133  
 Ritchie, A. I. M., 553  
 Roux, G., 545  
 Ryrle, S. C., 423
- Sadhal, K. S., 439  
 Saldanha da Gama, R. M., 589  
 Samartín, A., 78  
 Samonds, M., 534  
 Sampaio, R., 589  
 Sarathy, R., 94  
 Savoia, M., 148  
 Scott, M., 652  
 Sen, A., 94  
 Sengupta, S., 86  
 Serrano, S. E., 181  
 Shahidehpour, S. M., 226  
 Shetty, B., 94
- Silverberg, L., 133  
 Singh, B., 269  
 Soh, W. K., 263  
 Solomonidis, C., 357  
 Srivastava, R., 282  
 Suckling, H., 423  
 Sun, Y., 576  
 Szmelter, J., 562
- Tabuenca, P., 78  
 Tadikonda, S. S. K., 245  
 Thompson, A. F. B., 374  
 Tin-Loi, F., 491  
 Tong, S. K., 226  
 Tsuboi, K., 26
- Uri, N. D., 16
- Vested, H. J., 506
- Wang, P., 652  
 Warrick, A. W., 155  
 Weatherill, N. P., 562  
 Weaver, L. L., Jr., 133  
 Whalley, R., 659  
 Whitley, R. J., 114  
 Wu, S. L., 394  
 Wu, Y.-C., 307
- Xiang, J., 404
- Yang, C. C., 394  
 Yang, S.-A., 325  
 Yang, Z.-W., 384  
 Yanushevsky, R. T., 208  
 Yarimer, E., 357  
 Yonge, D. R., 630  
 Younis, B. A., 476  
 Younis, M. A., 141
- Zeng, Z., 659  
 Zili, M., 320

## TITLE INDEX

- A boundary element approach for parabolic differential equations using a class of particular solutions, 124  
 A Cauchy integral element for power-type singularities, 450  
 A comparison of source term and enthalpy approaches to the numerical simulation of the solidification of ductile irons, 534  
 Adaptive block-implicit methods for annular liquid jets, 464  
 A decision support system for automated guided vehicle system design, 170  
 Advection-dispersion modelling in three dimensions, 506
- Algorithms for two-dimensional transfer function computation, 659  
 An adaptive node-moving algorithm for evolution type problems, 431  
 An algorithm for dynamic routing in FMS under an unpredicted failure, 141  
 Analysis for melt puddle in the planar flow casting process—A mathematical modelling study, 394  
 Analysis of rectangular plate resting on an elastic half space using an energy approach, 338  
 An analysis of the marginal value of cropland and nitrogen fertilizer use under alternative farm programs, 16
- An energy approach to cavitation bubbles near compliant surfaces, 263  
 An inhomogeneous nonlinear boundary value problem in model reactive media, 291  
 A new boundary element method for the solution of plane steady-state thermoelastic fracture mechanics problems, 618  
 A new method for coupling of boundary element method and finite element method, 43  
 An integer goal programming model for hazardous waste treatment and disposal, 645

- An M/G/1-type queuing model with service times depending on queue length, 652
- A nonoverlapped domain decomposition for a class of convection-diffusion problems, 101
- A numerical simulation of the axisymmetric vortex breakdown in a tube, 414
- A point enrichment strategy for polygonal finite volume meshes, 562
- Approximations for diffusion from a disc source, 155
- A scheduling model for the daily operation of an electric power system, 226
- A theoretical study of end effects for rectangular resonators on narrow channels, 307
- A variational technique for the computation of the vibration frequencies of mechanical systems governed by nonsymmetric matrices, 148
- Beams on random elastic supports, 330
- Boundary conditions for the two-dimensional Saint-Venant equation system, 498
- Calculations of the concentration field of a turbulent methane jet, 476
- Calculations on nonlinear dielectric slab waveguides by the iterative eigenfunction expansion method, 605
- CFDMARK: A CFD-based benchmark for high-performance computer systems, 610
- Collapse limit surface generation for multiparametric loading, 491
- Complex variable element solution of potential flow problems using Taylor series for error analysis, 114
- Computer modeling of water quality in large multiple-source networks, 439
- Design of recursive filters for random wave simulation, 357
- Direct and integration methods of parameter estimation in groundwater transport systems, 404
- Dynamic modelling for age distribution and age-based policies in manpower planning, 192
- Efficient evaluation of integrals in three-dimensional boundary element method using linear shape functions over plane triangular elements, 282
- Finite element modelling of multisolute activated carbon adsorption, 630
- First-passage problems in linear biased correlated walks, 47
- Flow from a vertical slot into a layer of finite depth, 300
- Index of differential-algebraic equations governing the dynamics of constrained mechanical systems, 70
- Interaction between hydrodynamic effects and control policies in a tidal power scheme, 423
- Laminar film condensation on a finite-size horizontal plate with suction at the wall, 325
- Mathematical modelling of mass transfer rates between solid and liquid in high-temperature gas-stirred melts, 255
- Modelling and adaptive predictive control of a continuous fermentation process, 545
- Modelling and simulation of energy transfer in a saturated flow through a porous medium, 589
- Modelling of monolithic catalytic converters used in automotive pollution control, 484
- Numerical model for the study of hydrodynamics on bays and estuaries, 78
- On a batch service queue with single vacation, 36
- On an integro-PDE arising from the balance equation of crystal growth—Analytical solutions and simplifications, 214
- On axially and helically symmetric fundamental solutions to modified Helmholtz-type equations, 314
- Optimal strategic planning problems in manufacturing based on the input-output models, 208
- Particle-grid methods for reacting flows in porous media with application to Fisher's equation, 374
- Quality implications of machine assignment decisions in a flexible manufacturing system, 86
- Rate-limiting factors in dump leaching of pyritic ores, 553
- Semianalytical methods in stochastic groundwater transport, 181
- Shooting methods for some steady diffusion and convection problems, 638
- Simulation of unsteady viscous flow around a longitudinally oscillating circular cylinder in a uniform flow, 26
- Static soil-structure interaction analysis by FE-BE coupling method, 384
- Stochastic sensitivity analysis, 3
- Studies in the approximate control of flexible structures, 245
- The application of large-scale systems optimization control algorithms, 201
- The discrete element method for the simulation of ball mills, 598
- The K-coverage concentrator location problem, 94
- The piecewise parabolic finite analytic method. Part I: Theory, 576
- The relevance of overall heat transfer coefficients in the simulation of catalytic fixed bed reactors with the heterogeneous one-dimensional model, 520
- Transverse vibration of circular and elliptic plates with quadratically varying thickness, 269
- Unified theory of automation in process planning utilizing multiobjectives under real world constraints, 58
- Uniform damping control: discretization and optimization, 133
- Waiting time for a cyclic service system with priority, 320

## KEYWORD INDEX

- Activated carbon, 630
- Adaptive control, 545
- Adaptive finite elements, 431
- Adaptivity, 562
- Advection-diffusion-reaction equations, 374
- Advection-dispersion, 506
- Age-based policies, 192
- Age-distribution, 192
- Algorithms, 431, 659
- Amorphous ribbon, 394
- Analytical solution, 214
- Annular liquid jets, 464
- ARMA models, 357
- Automated guided vehicle systems, 170
- Automotive emission control, 484
- Axisymmetric system, 314
- Ball charge motion, 598
- Ball mill, 598
- Base acreage, 16
- Batch service, 36
- BEM, 384
- Benchmark, 610
- Biased walk, 47
- Bifurcation, 291
- Bio-leaching, 553
- Bioreactor control, 545
- Block-bidiagonal method, 464
- Block-implicit techniques, 464
- Bonus service model, 652
- Boundary element, 450
- Boundary element method, 43, 124, 282, 314
- Boundary integral equations, 618
- Boundary integral equation method, 307
- Boundary singularity, 450
- Bubbles, 263
- Burgers' equation, 431
- Busy period, 36
- Cauchy integral, 450
- Cavitation, 263
- CFD, 562, 610
- Collapse surfaces, 491

- Combustion, 291, 476  
 Complex variable boundary element method, 114  
 Compliant surfaces, 263  
 Computation, 659  
 Computer networks, 94  
 Constrained systems, 70  
 Contact stress, 338  
 Continuous, 58  
 Control, 133  
 Convection, 638  
 Convection-diffusion, 101, 553  
 Convective diffusion equation, 576  
 Convergence, 576  
 Cooling tower, 384  
 Corner point, 450  
 Correlated walk, 47  
 Coupling method, 384  
 Crystal population density, 214
- DAEs, 70  
 Dead load, 384  
 Decision support systems, 170  
 Deflection function, 338  
 Deformation of wave, 307  
 Degree of bias, 47  
 Degree of correlation, 47  
 Detonation, 291  
 Diffusion, 155, 638  
 Digital filtering, 357  
 Directional spectra, 357  
 Discrete, 58  
 Discrete element method, 598  
 Discretization, 133  
 Discretization in time, 124  
 Disc source, 155  
 Domain decomposition, 101, 638  
 Ductile iron, 534
- Economic dispatch, 226  
 Eigenfunction expansion, 605  
 Eigenvalue computation, 148  
 Elastic motion control, 245  
 End effect, 307  
 Energy generation, 423  
 Energy principles, 338  
 Energy transfer, 589  
 Enthalpy formulation, 534  
 Error analysis, 114  
 Eulerian-Lagrangian, 553  
 Eutectic solidification, 534
- FEM, 384  
 Finite analytic method, 576  
 Finite element, 534, 630  
 Finite element method, 43, 404, 414  
 Finite elements, 78  
 Finite volume methods, 562  
 Fixed bed reactor, 520  
 Flexible manufacturing systems, 141  
 Flow distribution, 439  
 FMS, 86  
 Form program analysis, 16  
 Fourier-Bessel theorem, 314  
 Frequencies, 269  
 Free-surface flow, 300  
 Fundamental solution, 314
- Gas dispersion, 476  
 Gas-stirred reactor, 255  
 Geometric programming, 58  
 Goal programming, 645  
 Groundwater contamination, 16
- Groundwater models, 181  
 Groundwater transport, 404
- Hazardous waste management, 645  
 Heat transfer, 520  
 Helically symmetric system, 314  
 Heterogeneous model, 520  
 Hierarchical control techniques, 201  
 Homogeneous layers, 300  
 Horizontal plate condensation, 325  
 Hydrodynamics, 78
- Imbedded Markov chain, 652  
 Industrial crystallization, 214  
 Infiltration, 155  
 Inflow, 300  
 Input-output models, 208  
 Integrated manufacturing, 208  
 Integration method, 404  
 Integro-differential equation, 214  
 Interaction, 338  
 Interface coupling, 101  
 Internal cracks, 618
- Jet flows, 476
- K-coverage problem, 94  
 Kelvin impulse, 263
- Lagrangian relaxation, 226  
 Lakes, 300  
 Laplace-Stieltjes transform, 320  
 Large-scale systems, 201  
 Latent heat evolution, 534  
 Limit analysis, 491  
 Linear algebra, 498  
 Linearized control design, 245  
 Linear programming, 491  
 Linpack, 610  
 Location-allocation analysis, 645  
 Lock-in-phenomena, 26
- Manpower planning, 192  
 Marginal value of cropland, 16  
 Marker and cell method, 26  
 Mathematical modelling, 255  
 Mathematical models, 201  
 Mathematical optimization, 645  
 Mathematical programming, 86  
 Methods of lines, 464  
 Method of matched eigenfunction expansion, 307  
 M/G/1-type queue, 652  
 Modelling, 630  
 Models, 659  
 Mode shapes, 269  
 Modified Helmholtz-type equation, 314  
 Monolithic catalyst, 484  
 Multiobjectives, 58  
 Multiparameter loading, 491  
 Multisolute adsorption, 630
- Navier-Stokes equations, 414  
 Nitrogen fertilizer, 16  
 Nonconservative loads, 148  
 Nonlinear boundary value problems, 291  
 Nonlinear control, 245  
 Nonlinear optical waveguides, 605  
 Nonlinear response, 3  
 Nucleation burst, 214  
 Numerical integration, 282  
 Numerical methods, 374  
 Numerical simulation, 534
- On-line computer control, 201  
 On line estimation, 545  
 Operational attributes, 86  
 Optimal control, 423  
 Optimal strategic planning, 208  
 Optimization, 133, 201
- Parabolic differential equations, 124  
 Parallel implementation, 101  
 Parameter estimation, 201, 404  
 Partial differential equation, 498  
 Particle methods, 374  
 Particular solution, 124  
 Pipe networks, 439  
 Planar flow casting, 394  
 Plates with variable thickness, 269  
 Point enrichment, 562  
 Porous medium, 589  
 Potential flow, 263  
 Potential flow problems, 114  
 Potential theory, 155  
 Power system operation, 226  
 Predictive control, 545  
 Priority, 320  
 Process computer control, 201  
 Process planning, 58  
 Production control, 141  
 Program control, 70  
 Projection technique, 148  
 Puddle formation, 394  
 Pyrite oxidation, 553
- Quality, 86  
 Queue length, 320, 652  
 Queue size, 36  
 QUICKEST, 506
- Random process simulation, 357  
 Random walk, 47  
 Rayleigh-Ritz method, 269  
 Real-time systems, 201  
 Rectangular plate, 338  
 Resonator, 307  
 Runge-Kutta, 638
- Selective withdrawal, 300  
 Semianalytical methods, 181  
 Sensitivity, 3  
 Shallow water equations, 78, 423  
 Shooting methods, 638  
 Simulation, 520, 598  
 Single vacation, 36  
 Soil half space, 384  
 Soil medium, 338  
 SOLA-VOF, 394  
 Solid-liquid mass transfer, 255  
 Source term algorithm, 534  
 SPEC, 610  
 Stability, 576  
 Stability analysis, 506  
 Static interaction, 384  
 Stochastic beams, 330  
 Stochastic differential equations, 181, 330  
 Stochastic process, 3  
 Stochastic subgrade reactions, 330  
 Subgradient optimization, 94  
 Suboptimal feasible solution, 226  
 Suction and integral method, 325  
 Symmetrization-iteration method, 43  
 System dynamics, 192
- Taylor series, 114  
 The equation of mathematical physics, 498

Theory of mixtures, 589  
Thermal stress intensity factors, 618  
Thermoelastic fracture mechanics, 618  
Three dimensions, 506  
Tidal barrage, 423  
Time series moments, 3  
Transfer functions, 659  
Triangular elements, 282  
Two-dimensional, 659

Unified theory, 58  
Uniform damping, 133  
Unit commitment, 226  
  
Validation, 3  
Variational methods, 148  
Vibration, 269  
Vibration frequencies, 148

Vortex breakdown, 414  
Vortex shedding, 26

Waiting time, 36, 320  
Warehouse location, 94  
Water quality, 439  
Wave kinematics, 357  
Wind pressure, 384

